

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1 – 42 (Cancelled)

Claim 43 (New) A method of producing short-wavelength electromagnetic emissions comprising:  
providing a target comprising a metallic compound solution in a target zone;  
irradiating the target with a high-energy source to form a plasma that generates electromagnetic emissions;

Claim 44 (New) A method according to claim 43 wherein the target comprises a metallic compound dissolved in a solvent.

Claim 45 (New) A method according to claim 43 wherein providing a target comprises forming droplets of the metallic compound solution.

Claim 46 (New) A method according to claim 43 wherein the average target size in the range of about 10 microns to about 100 microns.

Claim 47 (New) A method according to claim 43 wherein the step of providing a target is performed at temperature in the range of about 10 degrees C to about 30 degrees C.

Claim 48 (New) A method according to claim 43 wherein the high-energy source is a laser.

Claim 49 (New) A method according to claim 48 wherein the laser produces a laser beams having a diameter in the target zone that is substantially identical to the average target size.

Claim 50 (New) A method according to claim 43 wherein the target comprises a metallic salt and a solvent.

Claim 51 (New) A method according to claim 43 wherein the target comprises a metallic chloride and a solvent.

Claim 52 (New) A method according to claim 51 wherein the metallic chloride is selected from the group consisting of zinc chloride, copper chloride, tin chloride, and aluminum chloride.

Claim 53 (New) A method according to claim 43 wherein the target comprises a metallic bromide and a solvent.

Claim 54 (New). A method according to claim 253 wherein the metallic bromide is selected from the group consisting of zinc bromide, copper bromide, and tin bromide.

Claim 55 (New) A method according to claim 43 wherein the target comprises a metallic sulfate and a solvent.

Claim 56 (New) A method according to claim 55 wherein the metallic sulfate is selected from the group consisting of zinc sulfate, copper sulfate, and tin sulfate.

Claim 57 (New) A method according to claim 43 wherein the target comprises a metallic nitrate and a solvent.

Claim 58 (New) A method according to claim 57 wherein the metallic nitrate is selected from the group consisting of zinc nitrate, copper nitrate, and tin nitrate.

Claim 59 (New) A method according to claim 43 wherein the target comprises an organo-metallic compound and a solvent.

Claim 60 (New) A method according to claim 59 wherein the organo-metallic compound is selected from the group consisting of bromoform, diodomethane, selenium dioxide, and zinc dibromide.

Claim 61 (New) A method according to claim 43 wherein the short-wavelength electromagnetic emissions have a wavelength of about 11 nanometers.

Claim 62 (New) A method according to claim 43 wherein the short-wavelength electromagnetic emissions have a wavelength of about 13 nanometers.

Claim 63 (New) A system for producing short-wavelength electromagnetic emissions comprising:

a vacuum chamber;

a target dispenser connected to the vacuum chamber and configured to dispense targets comprising a metallic compound solution into a target zone; and

a focusing device in fixed relation to the target chamber, wherein the focusing device is operable to focus a high energy source onto the target zone.

Claim 64 (New) A system according to claim 63, further comprising a precision adjustment unit coupled with the target dispenser, wherein the precision adjustment unit is operable to adjust a position of the target zone in three orthogonal dimensions.

Claim 65 (New) A system according to claim 63, further comprising a collector mirror disposed in the vacuum chamber and operable to reflect the short wavelength electromagnetic emissions.

Claim 66 (New) A system according to claim 63, further comprising a cryogenic trap disposed in the vacuum chamber and operable to collect targets that are not irradiated by the high energy source.

Claim 67 (New) A system according to claim 63 wherein the focusing device is a lens.

Claim 68 (New) A system according to claim 63 wherein the average target size in the range of about 10 microns to about 100 microns.

Claim 69 (New) A system according to claim 63 wherein the high energy source is a laser.

Claim 70 (New) A system according to claim 45 wherein the laser is configured to produce a laser beam having a diameter in the target zone that is substantially identical to the average target size.

Claim 71 (New) A system according to claim 63 that is operable to provide targets in liquid form in a temperature range from about 10 degrees centigrade to about 30 degrees centigrade.